



## Theoretical Model Demonstrating the Value Adding Contribution of Facilities

Jensen, Per Anker

*Published in:*  
European Facilities Management Conference 2009

*Publication date:*  
2009

[Link back to DTU Orbit](#)

*Citation (APA):*  
Jensen, P. A. (2009). Theoretical Model Demonstrating the Value Adding Contribution of Facilities. In *European Facilities Management Conference 2009* (pp. 1-12). Euroforum.

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

## **Theoretical Model Demonstrating the Value Adding Contribution of Facilities Management**

Per Anker Jensen  
Centre of Facilities Management – Realdania Research  
Technical University of Denmark

### **Abstract**

**Purpose:** To present a conceptual framework - the FM Value Map - to understand and explain the different ways that FM can add value to a core business, and possibly to the surroundings.

**Methodology/approach:** The value map is developed based on inductive reasoning from an analysis of 36 cases in an explorative empirical study of FM best practice in the Nordic countries. It has been tested and modified from discussions in a NordicFM project group and aligned with the current European standardisation of taxonomy for FM.

**Findings:** The FM Value Map was successfully tested in a number of case studies from companies in the 5 Nordic countries.

**Research limitations/implications:** The present version of the FM Value Map is not seen as a final model, but as a result of an initial development. The model should be tested and validated further and also refined.

**Practical implications:** The FM Value Map can be used in general to provide a better understanding of the value and contributions of FM, for instance by FM organisations in the dialogue with their customers.

**Originality/value of paper:** The FM Value Map is a unique conceptual framework, and a comparison with other models shows that it provides the most holistic framework by including the impacts on the surroundings and all relevant stakeholders.

**Keywords:** Facilities Management, added value, best practice, inductive reasoning, conceptual framework. Research paper.

## **INTRODUCTION**

The main focus of FM has for a long time been on cost reductions, but in recent years we have noticed a change towards the need for FM to create value. In a research project based on an explorative empirical study of FM best practice in the Nordic countries, 36 cases has been analysed to identify the different ways that FM can create and add value. From inductive reasoning and by inspiration from strategic mapping in the balanced scorecard methodology (Kaplan & Norton, 2000), it has resulted in the development of a theoretical model called the FM Value Map. It focuses on the outcome of the processes in FM and the effects that FM can have, both on the core business and on the surroundings, and the benefits for the stakeholders - owners, staff, customers and society.

The model has been presented and tested on cases from companies in workshops as part of the project “Highlighting the added values for the core business provided by Facilities Management” under NordicFM, and it has been presented for workgroups on FM standardisation under CEN/TC 348. Based on this the model has been modified and aligned with the proposed standard for a FM taxonomy.

This paper presents theory on the concept of value and added value. It explains how the FM Value Map has been developed and compares it with other models of added value that have been developed, for instance from research on corporate real estate in the Netherlands and Finland. The paper will also present empirical findings and examples of how the FM Value Map can demonstrate the added value in specific cases. The model can be used in general to provide a better understanding of the value and contributions of FM, for instance by FM organisations in the dialogue with their customers.

It is planned to further refine and validate the model in future empirical based research, where the processes in FM will be categorised and analysed with focus on how they create value. In that way the results could also be used by facilities managers to organise and improve the FM processes with focus on the value adding effects. A joint EuroFM project on the added value of FM is also being planned, and this topic is suggested as an essential part of EuroFM’s research agenda for the coming years.

## **RESEARCH TOPIC**

The research topic is value creation as part of FM and how FM can add value to a core business as well as the surroundings - for the benefit of all relevant stakeholders. Adding value is seen as a contrast to pure cost reductions, but the relationship between value and cost is complex, and a clarification of this relationship is part of the research topic. The focus is on the effects of FM and not on the internal processes in a FM organisation, i.e. effectiveness rather than efficiency.

## **THEORY AND MODEL FORMATION**

### **The concepts of value and added value**

Value as a concept has many different meanings and usages. There is a basic difference between value in singular, expressing the worth of something, and values in plural, which is related to personal belief and social behaviour.

The distinction between exchange and use value was central to the way of thinking concerning value in classic economic theory in the 19<sup>th</sup> century. In neoclassic economic theory, the theory of value of labour from the classic economical theory was neglected, and value did not have a central role as a theoretical concept. In recent economic theory the concept of value has however got a renaissance – not least as the concept Economic Value Added (EVA), which clearly relates to exchange. Exchange value is in general the starting point for most economic thinking about value (Jensen, 2005).

Furthermore, the concept of value has become increasingly popular in some of the literature on management – not least within strategy and marketing. Among the most well known is Porter's theory on value chains, which like most economic theory relates to exchange value (Porter, 1985). Another example is the strategy thinking by Teece (2003) about non-tradable assets like knowledge, innovative capabilities, brands and service concepts, which relate to use value.

In terms of exchange value the focus is on cost and the relationship between output and input in a business process. The added value can be defined as the value of the product reduced by the value of the resources used during the process. Thus reducing cost by increasing efficiency leads to added exchange value. Use value only relates to the output – and possibly the outcome of a process – but does not concern the process as such. Thus qualitatively different and improved output by increased effectiveness leads to added use value. For both exchange value and use value the added value is a relative concept which refers to a change over time.

The difference between added use value and cost reduction is illustrated in Figure 1. It shows the relative development over time of cost and use value of a service compared to a base line with use value as specified in a Service Level Agreement (SLA). The use value of the service can for instance be measured by a Key Performance Indicator (KPI) with a minimum level of customer satisfaction. A cost reduction occurs, if the cost/price of the service over time goes down without lowering the customer satisfaction below the minimum level. Contrarily, an increase in use value will occur, if the customer satisfaction over time gets higher than the minimum level of customer satisfaction. This does not necessary involve a change in the SLA, but it means that added use value is created.

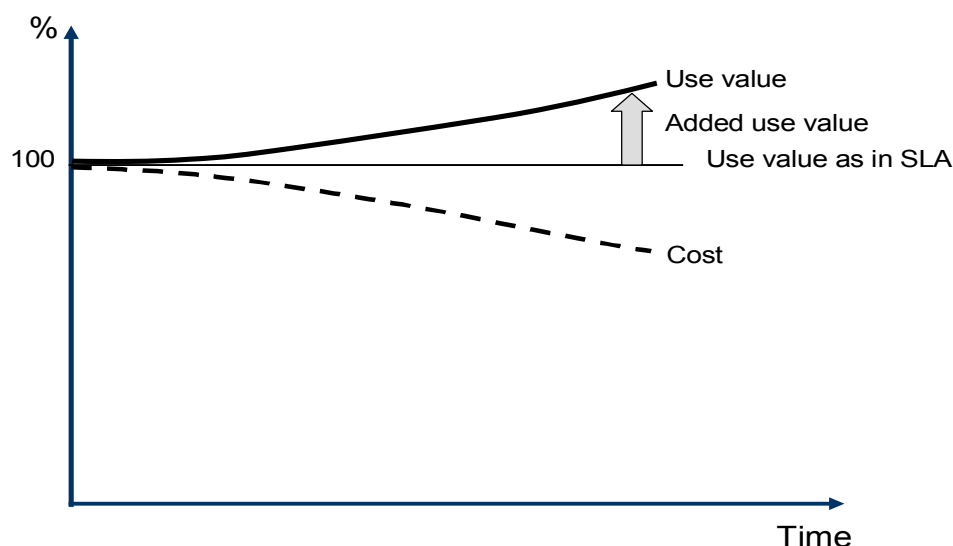


Figure 1. Added use value and cost reductions

**Research review**

Within research in the field of corporate real estate there have in recent years been some attempts to pinpoint the added value of real estate. This has included research in the 1990's by Jonge and Krumm at Delft University of Technology, who identified elements of added value of real estate (Krumm, 1999 and Dewulf et al, 2000). This research has recently been followed up by a doctoral thesis by Lindholm (2008), Helsinki University of Technology, who has implemented a model of strategic mapping from balanced score card methodology (Kaplan and Norton, 2000) to show how real estate strategies – closely related to the elements identified by Jonge and Krumm - can lead to profitability growth and/or revenue growth and thereby maximize the wealth of shareholders.

Lindholm identifies the following 7 strategies:

1. Increase value of assets (leads to revenue growth)
2. Promote marketing and sale (leads to revenue growth)
3. Increase innovation (leads to revenue growth)
4. Increase employee satisfaction (leads to revenue growth and/or profitability growth)
5. Increase productivity (leads to profitability growth)
6. Increase flexibility (leads to profitability growth)
7. Reduce cost (leads to profitability growth)

For each strategy is specified a number of different possible solutions in the real estate decision making at the operational level. The research has continued to test and validate the model by further case studies (Lindholm and Luoma, 2008).

The work by Jonge and Krumm has also been followed up by recent research at Delft University of Technology, where the impact of real estate interventions to organisational performance has been investigated through a survey among 47 Institutes of Higher Professional Education and additional interviews at 9 institutions (Vries et al, 2008). The empirical study was based on a theoretical model. The model takes its starting point from the thinking of Joroff et al (1993) that real estate is the fifth resource after human resources, technology, information and capital. These resources are inputs into an organisational process leading to the general outputs of products and services. The influences of real estate are investigated in relationship to production, image, flexibility, culture, innovation, satisfaction, cost, risk control, and the possibility to finance. The impacts on performance are related to changes in productivity, profitability and competitive advantages. In the model all these elements and relationships are inside the organisation, and outside the organisation is the context with legislation, society, market and demography as well as the perception of the stakeholders divided in owners, suppliers, government, clients, employees and neighbours.

Within the context of FM there has been research on the added value at the Vienna University of Technology with focus on the added value of implementing FM in a company, measured by whether a separate FM department has been established or not (Redlein and Sustr, 2008). The research has been based on a questionnaire survey. Research based on the use of basically the same questionnaire translated from German to

Dutch has been undertaken as part of a master thesis at Wageningen University (Smit, 2008). The added value was measured by the following parameters: One time cost savings, yearly savings, productivity increase, advantages and savings, and perceived success of FM. In the questionnaire the parameters were subdivided into a number of specific measures. The questionnaire is not available in English at the moment.

### **The FM Value Map**

As part of a research project at the Technical University of Denmark concerning FM best practice in the Nordic countries, a FM Value Map has been established as a conceptual framework to understand and explain the different ways that FM can add value to a core business and possibly to the surroundings. The top level structure of the value map includes that FM use certain resources that work at input to some processes, leading to a number of provisions as outputs. These provisions can as outcome have various impacts on both a core business and the surroundings. The impacts can be of benefit to various stakeholders.

On the second level (level 2) the resources of FM are subdivided into facilities and activities with facilities consisting of real estate and technology, whereas activities consist of manpower and know-how. The processes in FM are subdivided according to the quality circle of PDCA (Plan-Do-Check-Act) in planning, coordination, controlling and improving. The provisions of FM are subdivided in basic products and additional offerings. The basic products consist of space and services, whereas additional offerings consist of development and relationships. For the core business the impacts are divided into satisfaction, cost, productivity, reliability, adaptability, and culture. For the surroundings the impacts are divided into economical, social, spatial, and environmental. The stakeholders are divided into owners, staff, customers, and society.

The generic FM Value Map with top level and the second level (level 1 and 2) is shown in Figure 2. A third level of the value map has been defined and is included in Jensen et al (2008). As an example, facilities are subdivided into offices, shops, housing, and recreational.

## **RESEARCH METHODS FOR DATA COLLECTION**

The research project on FM best practice in the Nordic countries took place from 2005-8 and included 36 cases from Denmark, Norway, Sweden, Finland and Iceland. The compilation of cases was chosen on the basis of the following criteria:

- Significant examples of developments and change processes which demonstrate Best Practice or innovation
- Distribution on various themes within FM
- Distribution on various companies and organisations, private as well as public
- Geographical distribution within the Nordic countries, but with emphasis on Denmark

One of the main conclusions from the cases was that there is a change of focus within FM in the Nordic countries from cost reduction towards added value. The FM Value Map

was developed from a special analysis based on inductive reflections on how FM may create value. This was done by examining the cases and extracting the various elements or fields in which FM may be considered to create value. This resulted in a long list, which was divided into the following 11 subjects (alphabetically): Cooperation among companies, customers and end-users, economy and costs, effectiveness and productivity, environment and sustainability, facilities and workplaces, management in general, local area and region, staff, risks and continuity, and services.

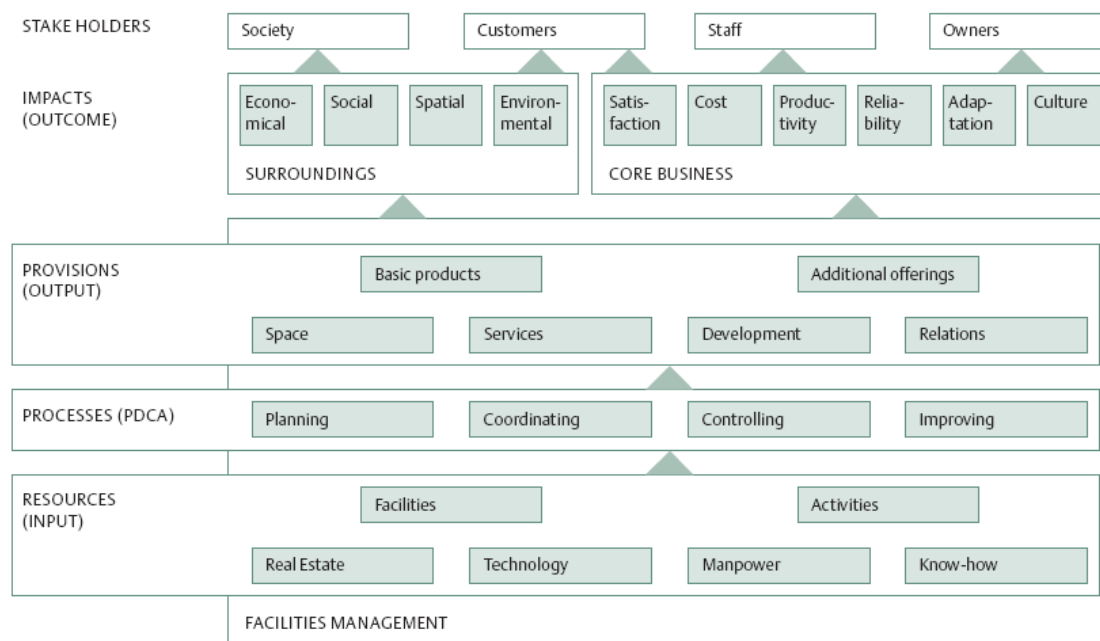


Figure 2. Generic FM Value Map, level 1 and 2.

It appeared that some of the subjects more consisted of causes, whereas others to a larger degree were effects. Inspired by strategy mapping from the balanced score card methodology (Kaplan & Norton, 2000) a classification was made into the following categories with the indicated interrelations: *Resources* lead to *results* of FM, which causes *effects*, which are in favour of different stakeholders. In a further analysis *processes* in FM was introduced with resources as input and results as output, and the effects were divided according to core activity and surroundings. On the basis of this the value map for FM was set up. In the value map the categories and interrelations mentioned above make the top level of a hierarchical structure.

The FM Value Map was as mentioned in the introduction developed alongside the work in a project within the Nordic FM network NordicFM with the topic “Highlighting the added values for the core business provided by Facilities Management”. The project group mostly included representatives from companies, and the author of this paper participated as researcher. The aim was to select exemplary cases of FM adding value in

the companies and to find convincing ways to present them to make FM interesting for top managers. The FM Value Map was presented in various versions in project workshops and further developed from the discussions.

The FM Value Map was also presented in the European standardisation work group CEN/TC 348 WG4 on taxonomy of FM, where the author of this paper was a member. The moderator of WG4 proposed the value map as a possible common framework for all the four WG's, which have been working on developing new European FM standards. Based on the dialog with WG4 the FM Value Map has been aligned to the proposed standard on taxonomy (CEN/TC 348, 2008a).

## RESEARCH FINDINGS

Value creation or added value appears repeatedly in the cases from the FM best practice research project. One example is the Danish finance corporation Nykredit, who has set up an equation called "user value ratio" as a tool for being able to measure and maximise the user value in all areas. This take place through a holistic oriented optimisation of each element of the user value ratio:

$$\text{User value} = \text{Quality \& Process} / \text{Price \& Difficulties}.$$

Among other things this fraction is used for evaluations, for instance in connection to decisions on supply of furniture. The object of the FM organisation in Nykredit is to create added value both to the company and to each employee.

The multinational Danish FM provider ISS also emphasises the importance to create value for its customers, and this take place in different ways. Making transparency by use of SLA's and KPI's for measuring results represents according ISS as such an added value, and it also creates added value that one due to the transparency is capable to scale the services up and down as needed. Preparation of an annual optimisation catalogue on large contracts and agreements on "gain-sharing" are also elements which according to ISS create added value to the customer.

Both the Copenhagen Property in the municipality of the capital of Denmark and the Service Administration in the municipality of Malmö in Sweden have as their objective to create added value to the customers, who are the citizens of the commune – directly or indirectly represented by the administration of the commune. The Service Administration finds that the customer to acknowledge an added value must have a little extra besides just having his demands and expectations fulfilled. It does not need to be anything expensive. It is more the fact that the person, who delivers the service, shows consideration and plain humanity. It must be spontaneous and not based on instructions.

In CPH (Copenhagen Airport) they highly focus on the customers' customers in the shape of the airline company's passengers and the customers in the airport shops. In granting these groups a good experience and time to shop, CPH contributes to the value



creation within the airline companies and the shops; hence making CPH an attractive partner.

### Tests of the FM Value Map

The FM Value Map was tested in relation to 4 of the 36 cases in the FM best practice research project. They included workplace management in Senate Property in Finland, space strategies in Statoil in Norway, public-private partnership in Iceland, and FM in schools in the Service Administration in Malmö Municipality. An example from the last mentioned case is shown in Figure 3.

The municipality in Malmö introduced FM in their schools by separating the activities related to the core business of teaching and the activities related to create the best possible frames for this “business”. A service reception became the centre of the contact between the school and the service organisation. The benefits were that the teachers got more time to prepare and teach, the status of the teachers was increased, and recruiting new teachers became easier. Furthermore, they achieved better physical environments, reduced sickness, better service for the same money, and an improved maintenance of the buildings. In the pilot project the head master of the school reported to have changed his time used on managing the teaching compared to FM-related activities from a 60/40% before to 85/15% after the implementation.

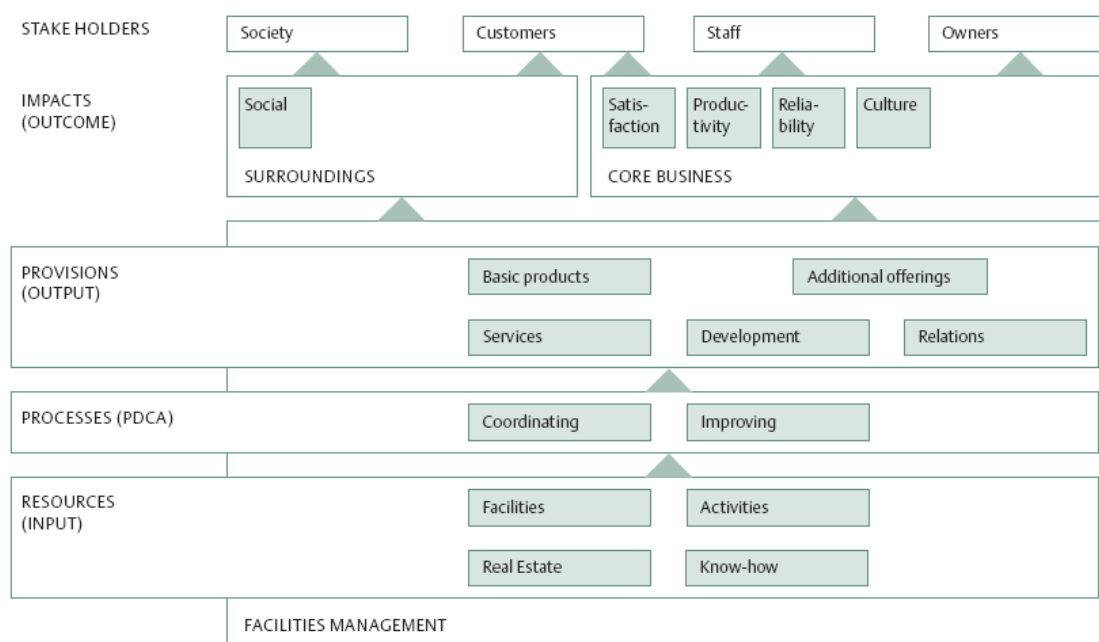


Figure 3. FM Value Map for FM in Schools in Malmö Municipality

The value map shows that the resources used were the facilities, which were changed by establishing a service desk, and know-how to organise the service staff according to a FM

concept. The provisions were a number of improved services and establishing long-term relationships with mutual development. The core business experienced more satisfied staff, improved productivity, more reliability and improved image. The surrounding local area experienced better teaching of the kids. All together this was of benefit for the owners represented by the elected politicians, the staff in the schools as well as the FM staff, the customers in terms of pupils and their parents, and the local society.

The FM Value Map was also successfully tested in relation to 4 examples of developments of FM in the Danish pharmaceutical company Lundbeck as part of the NordicFM project. During the various tests and discussions a number of changes in the value map were made. Among these were:

- Introduction of the Processes as a mediator between Resources and Results and Results changed to Provisions
- Introduction of adaptability and culture as impact on core business and changing risk reduction to reliability
- Dividing impacts on Surroundings first in economical, social and environmental, and later on adding spatial
- FM staff generalised to Staff at the second level with subdivision at the third level

This alignment with CEN/TC 348 WG4 included:

- The division of FM resources in facilities and activities
- The division of FM processes according to the PDCA quality circle
- The division of FM provisions in basic products and additional offerings

The last mentioned alignment is the most important and needs a further explanation. The proposed taxonomy includes a number of classified FM products, which are equivalent to the basic products in the value map. The classified products are subdivided in products related to Space & Infrastructure and People & Infrastructure. In the FM Value Map an equivalent division is made in Space and Services. The value map includes additional offerings consisting of development and relationships, which cannot be classified as FM products and therefore cannot be included in the proposed standard. However, active involvement in developing and improving the services and establishing long-term relationships built on trust between providers and customers is essential to FM and not least with respect to adding value. The proposed taxonomy does not cover the impacts of FM and the benefits for stakeholders, but these aspects are essential to the FM Value Map.

Besides these changes and alignments, the graphical presentation of the value map has been developed and subdivisions of the different elements have been added.

## REFLECTIONS

The present version of the FM Value Map is not seen as the final model, but as a result of an initial development. The model should be tested and validated further and should be

refined. The value map should also be aligned with the final version of the proposed European FM standards, and not only with taxonomy standard but also the other standards. For instance there is in the present proposals a difference in the way activities are treated. In the proposed standard on taxonomy, activities are regarded as inputs into a process, while the proposed standard on processes treats activities as a subdivision of a process (CEN/TC 348, 2008a and 2008b). The present version of the FM Value Map is, as mentioned earlier, aligned with the proposed taxonomy standard. A proposal could be to replace “Activities” with “Competences” as input in the value map, but that will depend on the final version of the standards.

The research review reveals that quite different parameters have been used in the various research projects. However, an analysis shows that all the parameters can be grouped in the following three main categories related to impacts on core business: People, processes and economy. The exception is that only the FM Value Map (Jensen et al., 2008) among the research projects included in the comparison includes a category for impacts on the surroundings. The results of the comparison are shown in Figure 4.

	<b>Lindholm (2008)</b>	<b>Vries et al. (2008)</b>	<b>Smit (2008)</b>	<b>Jensen et al. (2008)</b>
<b>People</b>	Increase employee satisfaction	Image Culture Satisfaction	Perceived success of FM	Satisfaction Culture
<b>Process</b>	Increase innovation Increase productivity Increase flexibility	Production Flexibility Innovation Risk control	Productivity increase Advantages & savings	Productivity Reliability Adaptability
<b>Economy</b>	Increase value of assets Promote marketing and sale Reduce cost	Cost Possibility to finance	One time savings Yearly savings	Cost
<b>Surroundings</b>				Economical Social Spatial Environmental

Figure 4. Comparison of parameters of FM value adding.

Another main difference is that the FM Value Map has relatively more parameters on the added use value aspects concerning people and processes compared to economy related aspects. The two first projects (Lindholm, 2008 and Vries et al, 2008) belong to the corporate real estate research, which explains the focus on parameters like “Increase value of assets” and “Possibility to finance”, while the third project (Smit, 2008) concerns FM and has a strong focus on various forms of cost reductions.

The FM Value Map is like Lindholm inspired by strategic mapping in balanced score card methodology. Both the FM Value Map and Vries et al. use a process view, but Vries

et al. see real estate as input to an organisational (core business) process, while the FM Value Map sees facilities including real estate as input to FM processes that deliver various provisions to a core business and with possible impacts on the surrounding. The FM Value Map and Smit (2008) has a FM focus rather than a corporate real estate focus, which implies a broader service perspective, but less emphasis on real estate investments.

The comparison shows that the FM Value Map, by including the impacts on the surroundings and all relevant stakeholders, provides the most holistic framework. The impacts on the surroundings are of particular importance for public organisations, but they are also important for real estate development in general, and for private companies concerned with corporate social responsibility.

However, the comparison also shows that the differences are fairly limited, and there could be a basis to develop a common framework to pinpoint the added value of FM and real estate.

### **SUGGESTION FOR THE RESEARCH AGENDA**

The research presented in this paper with the formation of the FM Value Map as a theoretical model is planned to be continued in a new project at the Centre for Facilities Management – Realdania Research at the Technical University of Denmark. The project title is “FM Processes and Added Value” and it will include a master thesis and a PhD-study. The project will relate the external effects of FM with the internal processes.

It is also planned to carry out a joint EuroFM research project on “The Added Value of FM” under the Research Network Group. The purpose of the project is to bring together researchers from the different research environments among EuroFM members, who are engaged or interested in comparing and developing joint research activities on the added value of FM. The project will result in a EuroFM research publication, which collects and compares examples of research and presents results of joint research activities. It is not necessarily the purpose to develop a common framework for studying the topic, but the project will bring together information about the different frameworks, which are applied, and investigate common grounds, reasons for differences, and possibilities for joint developments. The project participants will include researchers from Austria, Denmark, Finland, the Netherlands, Switzerland and UK.

Based on these new activities the topic of the added value of FM should be an essential part of the EuroFM research agenda for the coming years.

### **ACKNOWLEDGEMENTS**

The author would like to thank the companies participating in the case studies in the FM best practice research project, the participants in the NordicFM project, and the chairman Ole Emil Malmstrøm, and the participants in CEN/TC348 WG 4, and the moderator Marc Christen.

## REFERENCES

- CEN/TC 348 (2008a): *Taxonomy of Facility Management – Classification and Structures*. prEN 15221-4.
- CEN/TC 348 (2008b): *Facility Management – Part 5: Guidance on the Development and Improvement of Processes*. prEN 15221-5.
- Dewulf, G. Krumm, P. and Jonge H.d. (ed.) (2000): *Successful Corporate Real Estate Management*. ARKO Publishers.
- Jensen, P.A. (2005): Value Concepts and Value Based Collaboration in Building Projects. *Proceedings of CIB W096 Architectural Management*, Technical University of Denmark, p. 3-10.
- Jensen, P.A., Nielsen, K. and Nielsen, S.B. (2008): *Facilities Management Best Practice in the Nordic Countries – 36 cases*. Centre for Facilities Management – Realdania Research. Technical University of Denmark.
- Kaplan, R.S. and Norton, D.P. (2000): Having Trouble with Your Strategy? Then Map It. *Harvard Business Review*, September-October 2000.
- Krumm, J.M.M. (1999): *Corporate Real Estate Management in Multinational Corporations*. ARKO Publishers.
- Lindholm, A.-L. and Luoma, T. (2008): Added Value of FM for the Core Business. *Proceedings of 7<sup>th</sup> EuroFM Research Symposium*, EFMC2008, Manchester, pp. 193-204.
- Lindholm, A.-L. (2008): *Identifying and Measuring the Success of Corporate Real Estate Management*. Doctoral Thesis. Helsinki University of Technology.
- Smit, I. (2008): *A Study on the Added Value of Facility Management*. Master Thesis. Wageningen University.
- Porter, Michael (1985): *Competitive Advantage – Creating and Sustaining Superior Performance*. Free Press.
- Redlein, A. and Sustr, F. (2008): Economic Effective Implementation of FM: A Research Based Upon Financial Data. *Proceedings of 7<sup>th</sup> EuroFM Research Symposium*, EFMC2008, Manchester, pp. 221-229.
- Teece, David J. (2003): *Dynamic Capabilities: Retrospective and Prospective*. Paper presented at a guest lecture at Copenhagen Business School, 2. September 2003.
- Vries, J.C., Jonge, H.d. and Voordt, J.M.v.d.: (2008): Impact of Real Estate Interventions on Organisational Performance. *Journal of Corporate Real Estate*, Vol. 10, Issue 4, pp. 208-223.